This paper analyses the use of WV satellite maps and PV charts for forecasting of initiation of deep convection in the atmosphere. These prediction tools are compared with classical forecasting charts. It is argued that classical forecasting charts are not sufficiently precise to forecast convective development. A case of evolution of mesoscale convective system that occurred in Southern Serbia on 19th of June 2007 is used to illustrate these points. The paper explores the reasons for occurrence of this mesoscale convective system and its evolution into bow echo by using radar and satellite images.

At 16 UTC, a MCS formed over northwestern Serbia, was initiated near centers of the fires, but it could not develop further. After development of the PV anomaly, a strong outflow developed in the north and west, causing strong convection. At 19 UTC, the system to the north of Dacia was initiated, and a strong line of convection developed. At 22 UTC, the MCS had formed, consisting of three cells moving southwest and covering Serbia. Central density on the territory of Serbia. Cells were very strong, and heavy precipitation with severe thunderstorms and gusts of wind. The movement of the MCS was counter-clockwise, with the leading edge of the cold front.

At 22:30 local time, from previous MCS, we have formed a squall line that later exhibited bow echo characteristics in the next two hours, with strong straight-line winds and strong hail. During some period of time, all three cells in MCS showed three-body scatter spike (TSS) - characteristics of radar indication of strong hail. We have later learned from local observers that it was hail of unusual shape and dimensions - a conglomerate of hail. The formed mesoscale convective system in Eastern Bosnia, later transformed into bow echo, passed over the whole territory of Serbia and only then weakened and moved to South-Southwest Bulgaria.

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